

REMARKS

Claims 28-39 and 48-55 are pending.

Applicants would like to thank Examiner Friend for the personal interview held on May 15, 2003. During the interview, Applicants addressed the enablement rejection.

It is respectfully submitted that the present response presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the following remarks is requested.

I. The Rejection of Claims 28-39 and 48-55 under 35 U.S.C. 112, Enablement

Claims 28-39 and 48-55 are rejected under 35 U.S.C. 112, first paragraph, as allegedly lacking enablement. The Office action states that the specification allegedly does not provide enablement for catalysts other than the exemplified catalysts (enzymes and ribozymes). The Office action states, for example, that the specification provides no guidance with respect to metallic, organometallic and inorganic catalyst. The Office action also states that it appears that in every example, an additional enzyme is required to regenerate the substrate, and that the specification does not provide guidance with respect to other methods for regenerating substrate. This rejection is respectfully traversed.

Applicants respectfully submit that the scope of the protection sought by the claims is commensurate with the scope of the enablement provided by the specification as the specification enables an artisan also to practice the claimed invention for catalysts other than protein/peptide catalysts (e.g., enzymes) and nucleic acid catalyst (e.g., ribozymes). Foremost, as discussed at the interview, the specification does provide an example for small synthesized catalysts. In particular, Example 5 (Figure 10) of the specification was specifically provided to show the applicability of the claimed invention in the field of synthetic combinatorial chemistry. Although the catalyst itself is a peptide, the peptide was synthesized. Accordingly, this further demonstrates that difference between categories of catalyst (e.g., protein, nucleic acid and synthetic) is not a barrier to carrying out the claimed invention.

In addition to this specific example, the guidance and examples provided for protein and nucleic acid catalysts are also sufficiently instructive and applicable such that a skilled artisan could readily practice the claimed invention with other non-protein and non-nucleic acid catalysts. These general considerations are disclosed in the specification in the sections referenced in the prior response, and include, the general structure of the catalyst-substrate units and the process the artisan would perform to identify a catalyst from a library of catalysts

by substrate reloading, as claimed. Indeed, enzymatic catalysts, which have a very fast turnover rate compared to other catalysts and a relatively complex three-dimensional structure, can be considered to be as complex as or even more complex than other catalysts. That is, a non-enzymatic or non-nucleic acid catalysts (such as, chemical catalysts) are certainly are not *per se* more difficult to employ in the claimed invention than a protein or nucleic acid catalysts, and the embodiments illustrative of the protein and nucleic acid catalysts are sufficiently representative of the claimed invention.

Furthermore, although there would be some specific considerations which are relevant to the type of catalyst employed in the claimed invention (e.g., selecting an appropriate substrate and connecting the catalyst and substrate), any such specific considerations would be well within the ability of the highly skilled artisan applicable to this art and would entail only routine experimentation. In this regard, it should be noted that enablement is not precluded by the necessity for routine experimentation. See *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Accordingly, Applicants respectfully submit that the specification is enabled for catalysts other than protein and nucleic acid catalysts.

Applicants also respectfully submit that another enzyme is not required to regenerate the substrate. In particular, the Office action states that an additional enzyme appears to be required to regenerate the substrate, and that the specification does not provide guidance with respect to other means for converting product to substrate. Applicants respectfully submit that although in some cases it would clearly be preferred to use another enzyme to regenerate a substrate, an artisan can use non-enzymatic reagents to regenerate the substrate, including for example, pH conditions, temperature, chemicals, and spontaneous isomerization. For example, the specification discloses (at page 20) the use of non-enzymatic reagents including "nucleophile" and "1-3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride (EDC) and alcohol" for studying the desired reaction of "ester hydrolysis." Regeneration of the substrate without an enzyme by spontaneous isomerization is also illustrated in Figure 3, which is described in the specification on pages 21-24, and in particular, Figure 3D, in which the regeneration of substrate (i.e., converting product to substrate) is energetically favored.

Accordingly, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

II. Obviousness-Type Double Patenting


Claims 28-39 and 48-55 are provisionally rejected over claims 29-38 of co-pending Application no. 09/395,017. Applicants submit a terminal disclaimer to obviate this rejection.

III. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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